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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,650	09/26/2003	Gyu-Han Hwang	11038-106-999	7893

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EXAMINER

ALI, HYDER

ART UNIT	PAPER NUMBER
3747	

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/671,650

Applicant(s)

HWANG ET AL.

Examiner

HYDER ALI

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Objections***

Claim 8 is objected to because of the following informalities: regarding claim 8, it appears that "inlet" should read "outlet". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

Claim 1 is unclear because coolant cannot separately flow out from a single outlet. This can be corrected by providing a first outlet and a second outlet in order for a coolant to separately flow out of a cylinder head.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshikawa (JP 3-225015).

As to Claim 1, Yoshikawa discloses an engine cooling system comprising: a coolant inlet formed at one side of a cylinder block for allowing coolant to separately

flow into said block and a cylinder head; and a coolant outlet formed at an opposite side of said cylinder head for allowing the coolant having flowed along said cylinder block and said cylinder head to flow out of said cylinder block and said head, said coolant outlet being diagonally opposite to the coolant inlet. See Fig. 7.

As to Claim 6, Yoshikawa discloses said cylinder block has a second intermediate outlet hole for allowing the coolant to flow to said cylinder head there through, said second intermediate outlet hole being diagonally opposite to said coolant inlet, and wherein said cylinder head has a second intermediate inlet hole communicating with said second intermediate outlet hole of said cylinder block. See Fig. 7.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2,3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa (JP 3-225015) in view of Brubaker (US 1,985,240). Brubaker discloses the coolant introduced through coolant inlet is discharged through coolant outlet along different flow channels formed in cylinder block and cylinder head, respectively, without mixing in said cylinder block and cylinder head; wherein said coolant inlet comprises a first inlet 13 hole communicating with a water jacket formed in cylinder block 14; and a second inlet 2 hole communicating with another water jacket formed in cylinder head 4;

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wherein said coolant inlet is disposed closer to the rear of a car body in an engine compartment and said coolant outlet is disposed closer to the front of the car body in the engine compartment. It would have been obvious to a person having ordinary skill in the art to modify Yoshikawa by employing the coolant introduced through coolant inlet is discharged through coolant outlet along different flow channels formed in cylinder block and cylinder head, respectively, without mixing in said cylinder block and cylinder head; wherein said coolant inlet comprises a first inlet 13 communicating with a water jacket formed in cylinder block 14; and a second inlet 2 communicating with another water jacket formed in cylinder head 4; wherein said coolant inlet is disposed closer to the rear of a car body in an engine compartment and said coolant outlet is disposed closer to the front of the car body in the engine compartment in order to separately cool engine block and cylinder head.

### ***Allowable Subject Matter***

Claims 4,5,7 and 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The reference by Pitzman (US Patent 1,680,567) discloses internal combustion engine.

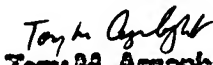
Any inquiry concerning this communication or earlier communications from the examiner should be directed to HYDER ALI whose telephone number is (703) 308-3949. The examiner can normally be reached on M-F (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HENRY YUEN can be reached on (703) 308-1946. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Tony M. Argonbright  
Primary Examiner  
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